

# PATENT SPECIFICATION

689,271

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Date of filing Complete Specification : Dec. 12, 1951.

Application Date : Dec. 13, 1950. No. 30386/50.

Complete Specification Published : March 25, 1953.

Index at Acceptance :—Class 69(iii), I(5 : 12).

## COMPLETE SPECIFICATION.

### Improvements in Sprayer Nozzles.

We, THE ECLIPSE SPRAYING CO. LIMITED, a British Company, of 1A, Rawlings Road, Bearwood, Smethwick, in the County of Stafford, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement :—

This invention relates to sprayer nozzles and has for its object to provide an improved construction wherein the nozzle produces a whirling spray and will have a longer life than those hitherto made when it is used with liquids which contain abrasive material.

According to the present invention the sprayer nozzle comprises a metal cap adapted to be secured on the end of the tubular body of a sprayer, a primary disc having a small hole at its centre mounted at or adjacent to the outer end of said cap, a fibre or other spacing ring behind the disc, a secondary disc behind and engaging at its periphery the rear face of the spacing ring, this secondary disc being made of baked synthetic resin containing embedded fabric and having at one or more positions off centre but within the internal diameter of the spacing ring one or more holes which are inclined to the axis of the primary disc but disposed each in a plane parallel to but offset from the axis, and a positioning ring behind said secondary disc, said positioning ring being adapted to be engaged by the edge of the end of the sprayer body.

In a modification the primary disc may be made integrally with the cap.

Sprayer nozzles according to the present invention are illustrated in the accompanying drawings, wherein :—

Figure 1 is a sectional side elevation of one form of sprayer nozzle ;

Figure 2 is a section on line 2—2 of Figure 1 ; and

Figure 3 is a view similar to Figure 1 showing an alternative construction.

In the construction illustrated in Figures 1 and 2 the sprayer nozzle comprises a metal cap 10 which is of cylindrical form and is internally threaded so that it may be screwed onto the external threaded tubular body 11 of the sprayer. This body 11 is also internally threaded whereby it may be screwed on to the end of the cylinder 12 of the usual pump associated with the sprayer.

The metal cap 10 is provided at its outer end with an inwardly projecting flange 13 and behind this flange 13 is located a primary disc 14 which is provided with a small hole 15 at its centre. Mounted behind this primary disc 14 is a spacing ring 16, which is preferably of fibre, the arrangement being that the outer face of this spacing ring 16 engages the inner face of the disc 14 whilst the inner face of the ring 16 engages the outer face of a secondary disc 17.

This secondary disc 17 is made of baked synthetic resin which contains embedded fabric and the disc 17 is provided with a pair of holes 18 which are disposed off centre of the disc 17 but within the internal diameter of the ring 16. These holes 18 are disposed each in a plane parallel to the axis of the secondary disc 17 but are inclined, in opposite directions, to the axis of this disc as clearly seen in Figures 1 and 2. Mounted behind the secondary disc 17 is a suitable cup shaped filter 19 which is provided at its outer end with a peripheral flange 20 which is secured between the inner face of the disc 17 and the outer face of a positioning ring or sealing washer 21 which is made of relatively soft material such as leather and whose inner face engages the outer end of the tubular body 11.

As clearly seen in Figure 1 the external diameters of the discs 14 and 17, of the ring 16 and of the flange 20 are substantially

equal to the diameter of the inner thread ridge of the metal cap 10 whilst the sealing washer 21 is of slightly larger external diameter so that its periphery enters the grooves of the thread so as to form a suitable seal.

In the construction shown in Figure 3 the general construction of the nozzle is the same as described above and the same reference numerals have been used for the corresponding parts. In this construction, however, the metal cap 10 is formed integrally with the primary disc 14 which disc in effect forms the end face of the cap 10.

In both of the constructions described above the metal cap 10 is provided with a portion on its exterior which is of non-circular form so that it can be readily unscrewed from the tubular body 11 so that the parts of the nozzle can be cleaned. Alternatively a portion of the exterior of the cap may be knurled.

In view of the fact that the two holes 18 in the secondary disc 17 are inclined in opposite directions the liquid passing through these holes is given a rotary movement so that a whirling spray will emanate from the opening 15 in the primary disc.

What we claim is:—

1. A sprayer nozzle comprising a metal cap adapted to be secured on the end of the tubular body of the sprayer, a primary disc having a small hole at its centre mounted at or adjacent to the outer end of said cap, a fibre or other spacing ring behind the disc, a secondary disc behind and engaging at its

periphery the rear face of the spacing ring, this secondary disc being made of baked synthetic resin containing embedded fabric and having at one or more positions off centre but within the internal diameter of the spacing ring one or more holes which is or are inclined to the axis of the primary disc but disposed each in a plane parallel to but offset from the axis, and a positioning ring behind said secondary disc, said positioning ring being adapted to be engaged by the edge of the end of the sprayer body.

2. A sprayer nozzle according to Claim 1, wherein the cap has an inwardly projecting flange at its outer end, the primary disc being located between said flange and the spacing ring.

3. A sprayer nozzle according to Claim 1, wherein the primary disc is formed integrally with the metal cap.

4. A sprayer nozzle substantially as hereinbefore described with reference to and as illustrated in Figures 1 and 2 of the accompanying drawings.

5. A sprayer nozzle substantially as hereinbefore described with reference to and as illustrated in Figure 3 of the accompanying drawings.

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## PROVISIONAL SPECIFICATION.

### Improvements in Sprayer Nozzles.

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This invention relates to sprayer nozzles and has for its object to provide an improved construction wherein the nozzle produces a whirling spray and will have a longer life than those hitherto made when used with liquids containing abrasive material.

According to the present invention the sprayer nozzle comprises a metal cap adapted to be secured on the end of the tubular body of a sprayer, the cap having an inwardly-projecting flange at its outer end and containing behind the flange a primary disc having a small hole at its centre, a fibre or other spacing ring behind the disc, a secondary disc behind and engaging at its periphery the rear face of the spacing ring, this secondary disc being made of baked syn-

thetic resin containing embedded fabric and having at one or more positions off centre but within the internal diameter of the spacing ring one or more holes which is or are inclined to the axis but disposed each in a plane parallel to but offset from the axis, and a positioning ring behind said secondary disc, said positioning ring being adapted to be engaged by the edge of the end of the sprayer body.

In a modification the primary disc may be made integrally with the cap.

The cap may be screw-threaded internally from its rear end up to the flange at its forward end, and the two discs and the spacing ring may be of a diameter equal to the diameter of the inner thread ridge, while the locating ring may be made of relatively soft material, such as leather, and is made of slightly larger diameter than the diameter of the internal thread ridge, so that its periphery enters the thread groove to a suitable extent.

The secondary disc is preferably provided with two holes equally spaced on opposite sides of the axis and inclined at the same angle to the axis but in opposite directions, so that the liquid passing through these

5 holes is given a rotary movement.

The cap is preferably provided with a portion on the exterior which is of non-circular form, or at its forward end it may

10 have an external knurled flange.

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Abingdon: Printed for Her Majesty's Stationery Office, by Burgess & Son (Abingdon), Ltd.—1953.  
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2,  
from which copies may be obtained.

FIG. 1.

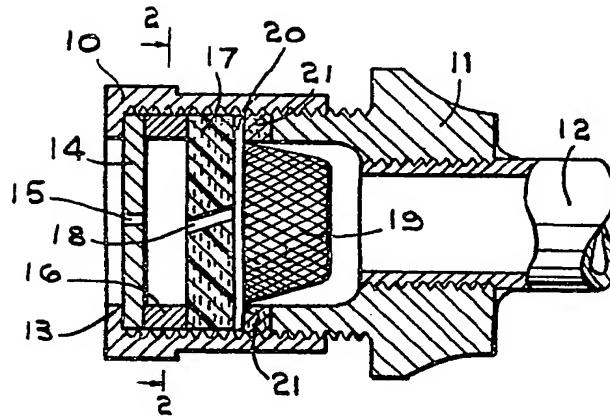


FIG. 2.

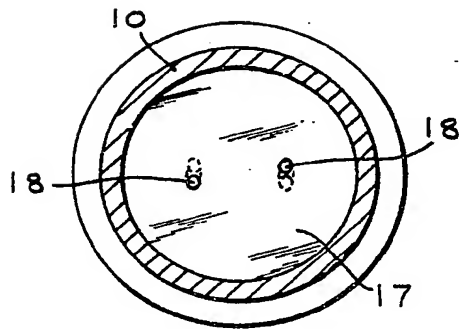


FIG. 3.

